

A PROPOSED

 **REF ID: A61,6835**

Government Incentives, Awards and Rewards Program

With Respect to Government Employees

**OFFICE OF THE CHAIRMAN
GOVERNMENT PATENTS BOARD
WASHINGTON, D. C.**

A PROPOSED

**Government
Incentives, Awards
and Rewards
Program**

**WITH RESPECT TO GOVERNMENT
EMPLOYEES**

Report of Interagency Working Committee
on Incentives, Awards, and Rewards Submitted
to the Chairman, Government Patents Board

MARCH 10, 1952

OFFICE OF THE CHAIRMAN
GOVERNMENT PATENTS BOARD
WASHINGTON 25, D. C.

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price 15 cents

CONTENTS

	Page
I. INTRODUCTION	1
A. Employees Covered in This Study	2
B. Importance of the Problem	2
II. EXISTING LAWS AND CURRENT PRACTICES	4
A. Existing Laws Applicable to More Than One Agency	4
B. Special Statutory Provisions for Certain Departments	8
C. Practices of Industry	10
D. Practices of Other Governments	14
III. DISCUSSION AND ANALYSIS	17
A. Pros and Cons Regarding a Separate Awards System for the Inventive Employee	18
B. Types of Awards	19
C. Deficiencies and Limitations in Present Laws Covering Awards	21
D. Deficiencies of System Which Permits Awards Under Special Departmental Statutory Authority	23
IV. FINDINGS AND CONCLUSIONS	24
A. Recommendations for New Legislation for a Comprehensive Incentives and Awards Program for All Government Employees Including Inventors	25
B. Recommendations Which May Be Effectuated Immediately Without New Legislation	27

FOREWORD

Because of general interest in the subject and because of the desirability of giving appropriate recognition to Government employees who make meritorious creative contributions useful in the performance of governmental functions and operations, this report on a proposed comprehensive Government incentives, awards, and rewards program is being made available as a publication of this Office.

The report has been submitted to me by an interagency working committee, appointed to make a study of the subject and to submit their findings and recommendations, with particular reference to the Government employee-inventor and the relation of such a program to the achievement of the objectives of the recently adopted uniform patent policy of the Government.

The report is based upon an intensive study made by the committee, under the able chairmanship of Henry A. Sawchuk of the United States Civil Service Commission. In it the committee discusses and analyzes the problems involved, existing statutory provisions and experiences thereunder, and the practices and experiences of American industry and of foreign governments. The committee also had the benefit of the long experience of the Royal Commission on Awards to Inventors in Great Britain and of the reactions to their conclusions and recommendations from sources both within and outside Government.

The recommendations of the committee cover two phases of action: (1) the enactment of new legislation having as its objective a comprehensive program for rewarding Government employees making all types of meritorious contributions, including inventions and discoveries of basic scientific principles, which are useful in the performance of any governmental function or operation, and (2) steps that may be taken immediately, pending the enactment of new legislation, to realize the most effective application of existing statutory provisions governing awards to Government employees.

As Chairman of the Government Patents Board, an independent agency responsible to the President for the formulation and administration of the uniform patent policy of the Government, I have brought the report to the attention of the heads of all departments and agencies in the Executive branch of the Government, and have requested that:

(1) The necessary steps be taken within each agency to see that, in the administration of existing awards programs that are now authorized by law, those programs are made applicable to meritorious inventive contributions as provided in those laws;

(2) Existing agency incentives and awards programs be reviewed to assure that the fullest possible advantage is taken of current laws as they apply to the employee inventor; and

(3) For the purpose of stimulating productivity of their employees generally, including inventive productivity, the agencies publicize, through appropriate

media, the fact that employees making inventive contributions of merit may be rewarded under current awards programs.

As the committee expressed in its conclusions, the advantage to the Government of rewarding inventors in the ways proposed are such that, if the public is to reap the rich potential harvest from their efforts and creative genius, positive measures to reward inventive achievement are eminently desirable. As a firm believer in the American patent system and in its continuing contribution to the economic and social development of our country, I am convinced that such an *ex gratia* awards program as the committee has proposed is entirely consistent with and a desirable supplement to the patent system.

Reactions to the program recommended by the committee will be welcomed from those who read this document and will be given consideration in the further development of such a program and of the necessary legislation.

ARCHIE M. PALMER,
Chairman, Government Patents Board

WASHINGTON, D. C.
June 4, 1952

I. INTRODUCTION

On January 30, 1951, Dr. Archie M. Palmer, the Chairman of the Government Patents Board, established an interagency working committee to make a study of the Government program of incentives, awards, and rewards in its relation to the achievement of the objectives of Executive Order 10096. The committee consisted of the following persons:

Mr. Henry A. Sawchuk, Civil Service Commission, Chairman
Dr. Henry L. Buckardt, Department of Defense
Dr. K. S. Gibson, National Bureau of Standards
Mr. Hubert H. Margolies, Department of Justice
Mr. Henry C. Rubin, Department of the Interior
Mr. Jack Simons, Federal Security Agency
Mr. Frank H. Spencer, Department of Agriculture
Dr. O. Glenn Stahl, Federal Personnel Council

In addition, Dr. Palmer furnished valuable guidance and assistance during the course of the committee's work, as did Mr. Charles F. Parker, Jr., of the Bureau of the Budget, Dean Willis R. Woolrich of the University of Texas (Consultant, Government Patents Board), Miss Gudrun L. Scheldrup of the Civil Service Commission, and Mr. John M. Hager of the Government Patents Board. Mrs. Mary S. Turner and Mr. Paul F. Johnson of the Government Patents Board functioned as recorder and secretary, respectively, for the committee.

Basic data underlying this study was obtained by a review of existing laws, reports and other pertinent literature. The principal Federal agencies affected were requested to furnish information on specific points, including their experiences, views, and recommendations. The committee met periodically and, as the scope and pattern of the inquiry developed, specific phases of the study were assigned to individual participants for further investigation and report.

In the course of the study, progress reports were made to the Chairman of the Government Patents Board, the Board itself at its monthly meetings, and the various Federal agencies.

The documentary materials upon which this study is based were taken from the files of the Government, or were furnished by the industrial organization or foreign country concerned. These materials are available in the files of the Government Patents Board or other agencies concerned. The discussions at the meetings of the committee on incentives, awards, and rewards are summarized in memoranda now in the files of the Government Patents Board. In addition, considerable information was taken from books, articles, reports, and other printed or published material.

Under Executive Order 10096 of January 23, 1950, 15 F. R. 389, which provides for a uniform patent policy for the Government with respect to inventions

made by Government employees and for the administration of such policy, a Government Patents Board was established consisting of a Chairman, appointed by the President, and a representative and alternate from the Departments of Agriculture, Commerce, Defense, Interior, Justice and State and from the Civil Service Commission, the Federal Security Agency, the National Advisory Committee for Aeronautics, and the General Services Administration.

By this order, a basic policy was established for all Government agencies with respect to inventions thereafter made by Government employees. This policy includes the determination of the right, title, and interest in and to inventions made by Government employees.

A. EMPLOYEES COVERED IN THIS STUDY

For the purpose of this report, consideration is given only to employees of the Government who may produce inventions, including military as well as civilian personnel of the various agencies affected by Executive Order 10096.

B. IMPORTANCE OF THE PROBLEM

Estimates place the number of American people whose livelihood is dependent upon patents in force at well over 12 million people or approximately one-fifth of the total employed population of the United States.

In the present international emergency, the United States is vitally interested in a high rate of productivity in advanced scientific and technological invention to compensate for our comparative deficiency in manpower.

For long-range national planning, an equally important objective of stimulating national inventive productivity is to conserve our material resources. This is especially significant in our role of international supplier of materials and machinery to allied or friendly nations.

It appears obvious that the heart of the whole program of stimulating and developing inventions is the problem of the inventor and the incentives to invention.

The present general awards systems in effect in the Government service, which provide for salary increases for superior accomplishment, salary increases and cash awards for economy and efficiency, cash awards for suggestions, and honor awards for efficient and constructive public service, have some merit. Their principal weaknesses are in their complexity, inadequacy, and inequality. They do not specifically provide for contributions of an inventive nature, and in this respect they are discriminatory and in many departments fail to give adequate incentive and encouragement.

There is consensus within the committee on incentives, awards, and rewards that it would be considerably more advantageous to the Government to have new legislation to simplify, liberalize, and integrate the entire incentives, awards,

and rewards programs for Government employees and incorporate in such legislation a uniform policy to apply to inventors in all Government agencies—civil and military.

Any incentives and awards system having as an objective the stimulation of inventive thinking must be developed and operated so that research and other essential programs of the Government are not impaired. On the contrary, a suitable system should not only strive to increase inventive productiveness, but should also improve the effectiveness of research and other programs by enhancing the urge to investigate fundamental principles and phenomena and to develop inventions to productiveness.

The National Inventors Council, which serves as a medium whereby the public may submit inventions of value in the defense and welfare of the Nation for consideration by the Department of Defense and other Federal agencies, has been considering the possibility of requesting the Congress to authorize a program in which suitable cash awards may be given to any person producing inventions of value to the armed services and other Government agencies.

II. EXISTING LAWS AND CURRENT PRACTICES

A. EXISTING LAWS APPLICABLE TO MORE THAN ONE AGENCY GOVERNING AWARDS TO ALL FEDERAL EMPLOYEES INCLUDING INVENTORS

Incentive awards to employees in the Federal Service are granted as official recognition of their contributions toward efficiency and economy of operation throughout the Federal Government. The various awards include step increases for superior accomplishment and salary increases or cash awards for efficiency, cash awards for suggestions, and honor awards.

1. The Laws

Awards programs are carried out under specific statutory authorities as follows:

Step increases for superior accomplishment under Title VII of the Classification Act of 1949 (Public Law 429, 81st Cong., approved October 28, 1949);

Efficiency awards under Title X of the Classification Act of 1949 (Public Law 429, 81st Cong., approved October 28, 1949);

Cash awards for suggestions under Section 14 of Public Law 600, 79th Congress, and under Executive Order 9817, issued pursuant thereto on December 31, 1946; and

Honor awards under Section 14 of Public Law 600, 79th Congress (the Administrative Expenses Act) and Section 5 of Executive Order 9817, December 31, 1946.

a. Step increases authorized for salaried employees under Title VII of the Classification Act of 1949

Employees of the Government compensated on a per annum basis, and occupying positions subject to the Classification Act of 1949, may under Title VII of the Act be given:

(1) Periodic step increases based primarily upon service and a performance rating of "Satisfactory" or better during a waiting period of 52 calendar weeks for employees in grades with step increases of less than \$200, and 78 calendar weeks for employees in grades with step increases of \$200 or more;

(2) Additional increases, granted only within the limit of available appropriations, as rewards for superior accomplishment, viz, outstanding sustained work performance; initiation of an idea, method, or device; or a special act or service in the public interest; and

(3) Longevity step increases based on long and faithful service.

Since periodic and longevity step increases are granted automatically upon satisfactory completion of a prescribed amount of service they will not be discussed in this report.

With respect to awards for superior accomplishment, each department is authorized to grant additional step increases, within the limit of appropriations, but no employee may receive more than one step increase for superior accomplishment within the time period prescribed for periodic salary advancements, i. e., 52 or 78 calendar weeks, depending on the grade of the position which the employee occupies.

The Civil Service Commission is required by law to issue standards upon which superior accomplishment awards shall be based. Each department is required to report to the Commission all actions approving such awards, and the Commission, in turn, is required to submit an annual report to Congress covering the numbers and types of awards granted. A summary of awards for the fiscal years 1947 to 1950 is shown in the following table:

Reasons for rewards for superior accomplishments

Awards for the fiscal year ending—	Total number	A Sustained work performance	B Initiation of an idea, method, or device	C Special act or service in the public interest
1947.....	1,249	984	166	99
1948.....	686	453	45	188
1949.....	972	608	73	291
1950.....	1,037	736	55	246
Grand total.....	3,944	2,781	339	824

It is significant from a perusal of the table above, that approximately 8.6 percent of rewards for superior accomplishments have been granted for "initiation of an idea, method, or device." Of this 8.6 percent, probably a very small percentage represents inventive accomplishments. The table above covers only the salaried employees of the Federal Government subject to the Classification Act of 1949, which encompasses, among others, professional, technical, and scientific workers engaged in research, design, development, and similar technical functions.

b. Efficiency awards under Title X of the Classification Act of 1949

Employees of the Government compensated on a per annum basis, and occupying positions subject to the Classification Act of 1949, may, under Title X of the Act, be given cash awards or increases in rates of basic compensation for accomplishments contributing to outstanding efficiency and economy.

A cash award for efficiency shall not exceed 25 percent of the estimated savings in the first year of operation, nor an amount equal to three times the step increase of an employee's grade. If the limitations on the amount of cash awards would result in inadequate reward, a salary increase equal to one, two, or three steps

for his grade may be granted to an employee for a suggestion or other contribution to efficiency or economy.

The Bureau of the Budget is required by law to maintain control of awards programs under Title X of the Act.

c. Cash awards for suggestions

Under Section 14 of Public Law 600 and Executive Order 9817, a cash award may be granted to any civilian officer or employee for an adopted suggestion outside the normal requirements of the duties of his position. Except in the Department of Defense, the total of all awards given by an agency during one fiscal year may not exceed \$25,000. If such an award is based on estimated savings resulting from adoption of the suggestion, the amount of the award shall be based on the estimated saving in the first year of operation in accordance with the following table, unless for a special reason the head of the department determines that a different amount is justified:

\$1-\$1,000.....	\$10 for each \$200 of savings with a minimum of \$10 for any adopted suggestion.
\$1,000-\$10,000.....	\$50 for the first \$1,000 of savings, and \$25 for each additional \$1,000 of savings.
\$10,000-\$100,000.....	\$275 for the first \$10,000 of savings, and \$50 for each additional \$10,000 of savings.
\$100,000 or more.....	\$725 for the first \$100,000 of savings, and \$100 for each additional \$100,000 of savings; provided that (except in the Department of Defense) the maximum award for any one suggestion shall be \$1,000.

If an award is based on improvements not identifiable as savings, the department determines the amount of the reward commensurate with the benefits anticipated.

At the end of each fiscal year, each department must report to the Director of the Bureau of the Budget the number of employee suggestions submitted, the number of employee suggestions adopted, the total amount of cash awards, and the total amount of estimated annual savings.

Section 9 of Executive Order 9817 provides that any cash awards to employees shall be in addition to their regular basic compensation. The acceptance of a cash award by any employee precludes him, his heirs, or assigns, from making any claim of any nature upon the United States for the use of the suggestion upon which the cash award is based.

A summary of cash awards granted for suggestions for the fiscal years 1947 to 1950 is shown in the following table:

<i>Awards for the fiscal year ending—</i>	<i>Number of cash awards made</i>	<i>Average amount of cash award</i>	<i>Average annual saving per award</i>
1947.....	11, 444	\$37. 41	\$1, 463
1948.....	13, 861	32. 44	1, 139
1949.....	20, 037	28. 74	919
1950.....	19, 973	28. 73	1, 034

The tabulation above includes all employees of the Government eligible for cash awards under Public Law 600 (the Administrative Expenses Act)—those employees paid on a per diem basis which includes the trades and crafts, as well as salaried employees subject to the Classification Act of 1949. Information is not available as to the number of cash awards granted for adopted suggestions of an inventive nature.

d. Honor awards

Under Public Law 600, 79th Congress, departments are authorized to incur necessary expenses for the honorary recognition of employees or organizational units for exceptional contributions toward efficient and constructive public service. Any officer or employee of a department or agency is eligible to receive an honor award.

Some departments or agencies have established honor award programs having only three such awards, while others have as many as four major types of awards. These are known as Distinguished Service Award, Superior Service Award, Length of Service Award, and Commendable Service Award. The titles of the awards may vary slightly among the various agencies but the principles on which recognition is granted are basically the same. The award may consist of a medal, lapel emblem, or an appropriate certificate, or a combination of these.

2. Publicity and Other Types of Recognition

It is generally recognized that publicity of awards is required and the program must be made known to employees generally if any substantial incentive value is to result and the program is to operate successfully. Ceremonies are usually held in connection with the presentation of awards to employees, with articles announcing such awards appearing in agency or departmental publications.

Employee recognition includes not only salary increases, cash awards, and honor awards, but other forms of recognition, such as promotional opportunities, letters of commendation to be inserted in personnel folders, and other expressions of approbation. While cash awards and salary increases are one important feature of the incentive awards program, they are considered as incidental to the broader objective of obtaining management improvement through genuine participation by employees in deciding on questions which affect them and the way in which their work will be done.

3. Machinery for Administration of Awards Programs

The diversified legal authorities existing at present, the divided control responsibilities at the executive level, and the close but complex relationship of the various types of awards have made it imperative that departments coordinate the administration of the awards program. Bureau of the Budget Circular A-8, Supplement I, dated February 28, 1950, issued jointly with the Civil Service Commission, requires each department to establish an over-all efficiency awards

committee to coordinate and administer its awards program. This is necessary in view of the fact that, for a particular contribution, an employee may now be eligible under the existing laws for awards under more than one program. Subordinate awards committees may be established in each agency to assist in administering the incentive awards programs. Members of any awards committee are selected from among the key operating and staff officers of the agency or the organizational unit which the committee serves. In organizations where the work is predominantly technical or scientific in nature, at least one committee member should have a technical or scientific background. Authority to grant awards may be delegated to the subordinate committees except where the legal authority for making the award does not permit such action. Each department issues instructions for the conduct of the awards program throughout that department.

B. SPECIAL STATUTORY PROVISIONS FOR CERTAIN DEPARTMENTS GOVERNING REWARDS TO INVENTORS

A patents and design board, composed of Assistant Secretaries of War, Navy, and Commerce, was created by the Act of July 2, 1926 (10 U. S. C., 1946 ed., sec. 310) to determine the amount, not to exceed \$75,000, which any individual, firm, or corporation may be paid for a design, whether patented or unpatented, for aircraft, aircraft parts, or aeronautical accessories. Any design submitted to the board for such consideration is referred to the National Advisory Committee for Aeronautics for its recommendation. Thus far only one award, in the amount of \$1,000, has been made under this statute, and that award was made to a Government employee.

Certain of the executive departments have been permitted, under special statutory provisions, to reward employee-inventors in their departments for meritorious suggestions and inventions. These provisions are as follows:

1. Department of the Interior

The Department of the Interior is authorized, by Public Law 357, Seventy-eighth Congress, second session (5 U. S. C., 1946 ed., sec. 500), to reward employees, in an amount not exceeding \$1,000 (nor to exceed \$20,000 in the aggregate during any one fiscal year), for any "suggestions or inventions" which would result in improvements in "technological or scientific processes or methods." Under this statute, the Department also may recommend to the Congress that special appropriation be made for an award to an employee-inventor in an exceptionally meritorious case.

As these provisions have been held by the Comptroller General, on March 20, 1947, to be not in conflict with the provisions of Section 14, Public Law 600, Seventy-ninth Congress (5 U. S. C., 1946 ed., sec. 116a), they remain available to the Department of the Interior.

Since the enactment of Public Law 600, the Department of the Interior has made only two awards to inventors, in the total amount of \$430, under its special statutory authority.

2. Post Office Department

The Post Office Department is authorized, under the provisions of the Act of December 3, 1945 (39 U. S. C., 1946 ed., sec. 813), to pay a cash award for any invention or suggestion which will clearly effect a material economy or increase efficiency in the administration or operation of the Post Office Department or the postal service. The amount of any one award may not exceed \$1,000, nor may the aggregate amount of awards in any one year exceed \$25,000.

The Post Office Department has not, since the enactment of Public Law 600, used the special statutory authority contained in the Act of December 3, 1945, for the purpose of making awards for inventions.

3. Department of the Army

The Department of the Army is authorized, under the Act of July 17, 1912 (50 U. S. C., 1946 ed., sec. 58), to make cash awards to employees of the Ordnance Department for an improvement or economy in manufacturing processes or plant. The aggregate amount of awards may not exceed \$1,000 in any one month.

Beginning with the 1943 appropriation act, and in subsequent appropriation acts, through 1946, the Department was authorized to pay awards to civilian employees for suggestions resulting in improvements or economy in manufacturing processes or plant, or military material. Substantial amounts were paid to employees under this authorization prior to 1947.

The Department of the Army has, since 1943, operated its awards programs on a department-wide basis. It has not, since the enactment of Public Law 600 in 1946, used the two previous authorizations mentioned above.

4. Department of the Navy

The Department of the Navy is authorized, by the Act of July 1, 1918 (5 U. S. C., 1946 ed., secs. 416a, 416b), to pay cash awards to civilian employees for suggestions resulting in an improvement or economy in manufacturing processes or plant or naval material.

From the date of the enactment of this legislation until 1945, the Navy Department paid out approximately \$750,000 as awards for suggestions. In practice, the awards were made, in general, to those in unskilled positions and in the lower civilian personnel grades. Special legislation was enacted in two cases authorizing the awards to officers of \$15,000 and \$2,500, respectively, for assignments of their inventions.

5. Tennessee Valley Authority

The Tennessee Valley Authority Act of 1933 (16 U. S. C., 1946 ed., sec. 831) authorizes the payment to employee-inventors of such sums as the TVA Board may deem proper "from the income of sale or licenses." However, while patent

licenses are issued by TVA subject to such terms and conditions as are appropriate to each particular case, licenses so issued are in general nonexclusive and royalty-free.

Since August 2, 1945, the TVA has filed an average of six patent applications per year. In addition, during the same period, an average of 75 technical suggestions per year were received from employees and formally considered under the TVA procedure of review. Of the total number of technical suggestions received since 1945, an average of approximately 20 per year have been of some use to TVA.

The TVA presently is of the opinion that it also has authority under the broad provisions of section 3 of its act to establish a system or program of incentives independent of any sharing of license income. While TVA has sponsored for a number of years an active suggestion plan through a series of cooperative committees, it does not, as a result of an employee-management agreement, grant cash awards for suggestions.

C. PRACTICES OF INDUSTRY

1. Sources of Information

To ascertain the policies of industry with regard to employees' inventions, existing reports and publications on this subject were studied. In a few cases information was obtained directly from certain companies. An exhaustive inquiry into current industrial practices was not undertaken because of lack of time and resources, and because the data already available in the various publications are sufficiently indicative for purposes of this report.

2. Assignment of Invention

The majority of industrial firms require their employees to execute agreements to assign title to their inventions. The firms which do not require written agreements generally have oral understandings to the same effect. There is no uniformity as to the employees covered—some firms require assignments from all employees, and other firms limit such agreements to those employees engaged in research and technical work. With respect to the scope of the assignment, it is the general practice to provide for assignment of any invention within the field of the company's business. There are two points of view as to the effect of assignments upon inventive productivity:

a. Experience in the past has demonstrated that employees, particularly those most likely to produce inventions, do not object to assignment provided their work is recognized and they are treated fairly. In the case of technicians and researchers, assignment is expected if the invention is made in the line of the man's employment. Also, assignments tend to reduce secrecy and to provide better teamwork and freedom in working with others on similar tasks.

b. The assignment of inventions in advance tends to dampen the incentive to invent. Many employees are antagonized when required to execute an agreement which may be interpreted as containing onerous terms for employment. It has been said: "Many of these employees feel that they are mortgaging their brains, ingenuity and ability for a stated salary because such contracts usually make no provision for a fair recompense in case an important invention is made."

Judging by the experience and practices of industrial firms, it appears that the requirement of an assignment does not appreciably affect inventive productivity on the part of technical and scientific employees. Although many firms require assignments from all employees, most companies limit the written requirement to their technical staffs.

3. Extent to Which Companies Stimulate Inventions

There is wide diversity of practice with respect to the degree to which inventions are encouraged. A few companies take no positive measures to stimulate inventions. While this group is in the minority, this attitude seems to be characteristic of the well-established industries where the processes and equipment are standardized. The theory here is that dreamers of new inventions make poor producers. The result of this attitude is that the industrial United States is replete with successful industries developed by men of inventive capacity who withdrew from their previous employment in dissatisfaction with the terms of invention assignments imposed upon them. Quite generally these men were individualists with a daring pioneer spirit who had courage to break away and start out on their own. Alert industrialists today recognize that these are the very men most valuable for the expansion of their businesses, thus the change in attitude toward these productive inventors.

Most companies encourage inventions on the part of all employees, but many of these companies concentrate on their engineering and research staffs since they have found through experience that almost invariably the important inventions are made by those who are employed for such a purpose.

The extent to which efforts are made to stimulate inventions among employees tends to vary with the nature of the work of the firm and the attitude of the company's management.

4. Rewards for Inventions

The practice with respect to the nature of awards and the amounts of cash awards given to inventors in industry is as diverse as industry itself. Some firms, large and small, do not give special cash awards to any employees, feeling that any inventive contribution should be considered as an element in determining whether promotion should be made, usually with an appropriate increase in salary or regular compensation. Some companies allow special cash bonuses for inventions made only by nontechnical or nonresearch personnel, taking the position that their professional employees are paid to invent and special awards for

inventors tend to retard their research and developmental programs. Most firms, however, allow special cash awards, in varying amounts, for inventions made by all employees. In some cases, special reward plans for inventions are applicable only to the technical and research personnel, in the belief that an invention represents something more than a suggestion, and consequently a special system, designed to stimulate and elicit patentable ideas from among those most likely to make such contributions, is justified.

In those cases where extra compensation, other than salary, is given for meritorious inventions, some companies make a fixed payment for each invention; other companies provide a sliding scale depending on the value of the invention. Those companies which make fixed payments may make such awards at different times and in different amounts. These payments may be made at the time of disclosure, at the time the patent application is filed, and at the time the patent is granted.

Many companies have plans for payments which go beyond the fixed award scheme. These systems usually provide for fixed awards and, in addition, subsequent variable cash awards or bonuses which may be based upon a percentage of royalties collected under licenses granted, value of the invention as measured by savings, and value of the invention as measured by profits realized.

In a few cases plans have been adopted wherein the entire group working in the field of the invention is rewarded instead of rewarding just the particular inventor. Such plans usually provide that a fixed percentage of the profits or savings resulting from inventions should go into a fund to be apportioned annually to all of the employees concerned. Such apportionment is usually dependent on the salary earned by the individual employee and his years of service.

5. Conclusion

As might be expected, there is no uniform pattern with respect to the encouragement and rewarding of inventors in industry. Even in the more homogeneous segments of industry there is a considerable diversity of practice due to the different attitudes and policies of the management of each organization. Many of the larger industrial firms have established policies of not giving their technical and research workers special rewards for their inventions. These firms usually consider inventions as an important factor in determining when the employee should be promoted or given a salary increase.

The following reasons are usually given for not having a special awards system for inventors:

a. Arguments Against Special Awards System for Inventors

(1) Those employees engaged in technical research and development are paid with the expectation that they may produce inventions.

(2) Other employees who devote too much time to inventive possibilities do so at a sacrifice in their regular productive output.

(3) Since many inventions stem from group effort, there is a practical difficulty in identifying the inventor, or inventors, to be rewarded and the extent of each person's contribution.

(4) Special rewards tend to reduce teamwork because some workers may become secretive about their work in hope of greater personal gain.

(5) Rewards for inventions are discriminatory against research workers and others who may make valuable discoveries that are not patentable.

(6) A special awards system for inventors encourages employees to submit large numbers of ill-considered ideas, and creates ill will against the company's patent department when decision is made not to seek protection.

On the other hand, a significant number of industrial firms, including some engaged in research work, have found it profitable and advantageous to develop a patent consciousness and to provide for suitable monetary rewards for all employees, including those engaged in research work. Proponents of this approach feel that special awards should be given to all inventors, whether under a separate system or as a part of an over-all company suggestion and awards system, because:

b. Arguments for Special Awards System for Inventors

(1) When an engineer, scientist, or other employee makes an important invention it is only proper that he receive a suitable recompense—he should not be denied a suitable special reward because he is performing research work, because he has technical education and training, or because he has greater imagination than his fellow workers.

(2) Rewarding of inventors by salary increase or promotion is not always practicable or fair—a salary increase for a particular inventive contribution may be inadequate if the employee should work at the increased salary for only a short time, whereas it may be disproportionately high if the employee continues to work indefinitely at the higher salary and should make no more meritorious inventions; also, with respect to promotions, not all inventors desire or are capable of assuming successfully positions of higher responsibility and importance.

(3) The absence of a positive awards plan for inventors has in part led to the use of the term "captive inventors" with reference particularly to salaried researchers.

(4) The absence of an awards system which definitely provides for inventors is not conducive to the encouragement of inventions.

(5) The following benefits may accrue from having a tangible system for rewarding all inventors:

(a) Useful inventions are promoted and a steady flow of ideas encouraged.

(b) Prompt reporting of inventions is encouraged.

(c) The work of a patent department is facilitated by increased cooperation from the inventors.

(d) Patent consciousness on the part of management is promoted.

(e) Good industrial relations are promoted by a well-administered plan.

D. PRACTICES OF OTHER GOVERNMENTS

An analysis of available information with respect to the practices of other Governments revealed relatively little of value to the purposes of this report. Great Britain, Canada, France, and the Scandinavian countries, especially Sweden, did offer some suggestions.

1. Great Britain

Within the British Government, the inventions of the public servants¹ historically have been considered property of the Crown unless it could be demonstrated that the idea and the work of developing the invention had been done independent of all association with Government time and/or facilities.

Until the end of the nineteenth century, monetary awards were rarely accorded civil servants for inventions of special merit in Great Britain, but they were recognized by distinctive state honors, the decoration conforming to the salary level.² of the servant.

A central committee on awards was set up by the Treasury on recommendation of the Civil Service Committee and the Civil Service National Whitley Council in 1930.

Under this awards system, departmental awards committees may recommend to the department or ministry head monetary awards to inventors up to one thousand pounds sterling. Also, they are authorized to recommend the distribution of the commercial rights between the inventor and the Government.

The central committee on awards is an agency of the Treasury and is appointed by the Treasury. The Treasury also supplies one member of each departmental awards committee. The committee may make awards up to ten thousand pounds sterling and may recommend to the Treasury the granting of even greater awards. It further serves as an award reviewing and coordinating board.

Cash awards to civil servants of Great Britain are not limited by the salary level of the inventor as has been the policy on decorations. In fact, departmental committees have been reported to be more liberal in making high cash awards to low rather than high salaried civil servants on the basis that more should be expected of a high salaried worker. In theory, cash awards for inventors in Britain are made inversely proportional to the proximity of the invention to the assigned duties of the civil servant concerned. However, in practice the committee decisions have been very objective and liberal in order to encourage those who are employed to invent to join freely in the competition with all other civil servants.

¹ Public servants of Great Britain are any employees of the Government except those who are elected to office or who receive salaries by hereditary process.

² Low-salaried servants can receive a decoration as M. B. E. (Member of the British Empire). For the next level, the O. B. E. (Order of the British Empire) might be given, then upward at the next levels to C. B. E. (Commander of the British Empire) and K. B. E. (Knight of the British Empire).

There is no regulation prohibiting both a cash award and an honors award for the same discovery or invention. In fact, Sir Frank Whittle was decorated as a Knight of the British Empire some time before he was given the £100,000 sterling tax-free cash award for the development of the jet engine. In determining the amount of this award, both the central committee on awards and the Royal Commission on Awards to Inventors participated.

There is some confusion on the part of both the British laymen and others on the functions of the Royal Commission on Awards to Inventors and its relationship to the central committee on awards. The forerunner of the present Royal Commission dates back to 1919 when a Royal Commission on Awards to Inventors was created immediately after World War I. While the scope of the Royal Commission's activity has varied from time to time, primarily it acts as an appeals tribunal for inventors. A large portion of its work has to do with men outside of Government, but it is available to civil servants when they desire to use it. When the Government makes use of a British patent, the Royal Commission on Awards to Inventors is the tribunal that can receive an appeal to determine the inventor's equity. The present Commission's authority dates back to its reorganization in 1946.

The Royal Commission was invited to participate in the discussions leading up to the Whittle award by the Treasury because of its experience in appraising inventions and also because of the high regard in which the members of the present Commission were held. The procedure of the central committee and the Treasury in using the services of the Royal Commission on Awards to Inventors as principal advisor in their more important investigations has now become established.

2. Canada

The employee-inventor of the Canadian Government in the ordinary services is granted at least one-half of the domestic proceeds from the exploitation of his invention and all of the foreign rights but is given considerable Government supervision in the licensing and assigning of his patents. This freedom for the employee to exploit his own patents was intended to encourage higher productivity of invention.

The National Research Council of Canada regulations of 1927 are more restrictive with its employee-inventors. The regulation requires that:

"All inventions made by members of the technical staff shall be vested in the Council and shall be made available to the public under such conditions and upon the payment of such fees as the Council may determine. This includes foreign as well as domestic rights."

The Council, with the approval of the Governor of the Council, is authorized to pay the inventors such royalties and fees as it believes warranted.

No statistical information is available on the merits of the two systems. The freedom of the employee to exploit his own patents does not seem to have inspired greater productivity in the ordinary Government departments. The National Research Council, in a period of about one-quarter of a century, does not show any significant income from Government-owned patents.

3. France

The Government departments of France use a flexible system of awards to inventors. If monetary awards are used, it is quite customary to make higher cash awards to the lower rather than the higher paid employees on the basis that more should be expected of the higher paid.

Honor awards are progressive. It is of interest that the title of the lowest state honor award takes on the same designation as one of the highest in Great Britain. The sequence is Knight, Officer, Commander, and Grand Cross in the different professional orders. It is quite customary for outstanding men to rise progressively from their first honor of Knight to the succeeding honors in their own turn. A French inventor usually would be more appreciative of the Grand Cross than of a cash award of several thousand tax-free gold francs. He will work with great zeal and enthusiasm and strive to reach this goal through the several sequential steps within his professional order.

4. Sweden

For the Scandinavian countries, Sweden is taken as the typical example. In the military service, inventors especially in the field of military weapons are from time to time given special gratuities. This is predicated on the idea that the inventor is unable to deal in a business way with such ideas or inventions.

III. DISCUSSION AND ANALYSIS

As a fundamental mechanism for stimulating thinking and eliciting beneficial ideas, the employee-participation program, involving a suggestion system with appropriate awards, is not a new thing in the American industrial scene. Nor is it new within the administration of the Federal Government.

Certainly the roots of the incentive systems run deep into the profound psychology of human relations and are firmly grounded in man's desire for improvement in the conditions under which he lives, for progress and advancement, and for a better way of life.

The idea of employee-participation in developing improvements in work and performance has demonstrated its worth. Specific methods of doing this, by specific kinds of suggestion systems, have been the subject of much debate.

The underlying principle of awards for suggestions and valuable ideas is to provide tangible evidence of public recognition of the value of services rendered.

Under this basic principle, the objective of any good suggestion system which provides for awards is, in brief, to secure constructive suggestions from as many employees as possible and thus improve employer-employee relations. This principle appears to be sound, whether the award consists of cash, a promotion, a certificate of merit, a medal of honor, or any of the many other kinds of awards in common use.

Benefits of a suggestion system accrue both to the employer and to the worker.

In the opinion of a majority of close students of incentives and awards systems, the actual saving represents the least of its value to the company. Undoubtedly a bigger value than the actual cash saving is the material help given by the suggestion system in keeping everybody in the organization on his toes and mentally alert. The improvement of industrial relations provides another large though intangible advantage to the organization.

The workman who contributes good ideas toward improving his job very soon begins to feel a proprietary interest in it. He feels that "This is my job," and soon that "This is my company."

An employee who turns in an idea which saves the company a lot of money may be dissatisfied if he does not receive what he considers a fair share of the savings in cash. Just the same, it is almost universal experience that the expectation of receiving a cash award is not the only incentive that originally inspires an employee to turn in a suggestion.

An employee develops ideas and turns them into suggestions because they furnish the needed outlet, the psychological mechanism for the expression of concepts identified with his deepest mental and spiritual being. He experiences pleasure at seeing his own ideas at work in concrete form; and, in the great majority of cases, he is genuinely interested in helping the organization for which

he is working. He honestly and actively dislikes waste and inefficiency and wants to do his part in improving company operations.

It is the belief of the committee on incentives, awards, and rewards that the fundamental principles governing the objective and application of suggestion and awards systems in general are applicable to inventors, as well as to those employees who might make meritorious contributions of a noninventive nature. Also, it is believed that whatever the formalized administrative machinery set up for incentive purposes, optimum results can be attained only by operating in a proper psychological environment in which management shows human understanding, fairness, and progressiveness in developing employee satisfaction by improving working conditions and according suitable recognition. As one writer puts it: "Personal tact, sympathetic and understanding handling, and a proper psychological approach to the employee may sometimes be of greater value than an actual cash reward in encouraging the loyalty, confidence, cooperation, interest, and good will of the employee."

A. PROS AND CONS REGARDING A SEPARATE AWARDS SYSTEM FOR THE INVENTIVE EMPLOYEE

So far as the committee has been able to ascertain, there is essentially unanimous opinion among Government departments that it would be unwise at this time to establish any system of rewards for inventions or patents that would not offer equal awards for other (nonpatentable) types of scientific or technological contributions or achievements. This was summarized in the committee's progress report under date of March 12, 1951, as follows:

It is highly significant that all agencies seem to concur that a separate awards system for the inventive employee is undesirable because undue emphasis on the inventive contribution may result in other classes of employees seeking special consideration, and it may seriously reduce the effectiveness of organizations engaged in research and development work. Special financial rewards to inventors may:

- lead to secrecy and lack of cooperativeness on the part of research and technical employees;
- involve administrative difficulties in determining the person to be rewarded whenever the invention is the result of group endeavor; and
- create dissatisfaction among unrewarded members of a research group, as well as among personnel assigned to functions not likely to produce an invention.

An improved general system of awards for all meritorious contributions, whether or not of an inventive nature, would be free of these objections.

In 1943 Dr. Lyman H. Briggs, former Director of the National Bureau of Standards, clearly stated the principal arguments against a special system of awards to inventors.

It is not believed wise to provide special awards to employees for specific inventions or discoveries. At first thought such rewards might seem advisable, but it is believed they have been found in the long run unprofitable in private research organizations. In a large organization, like the Bureau of Standards, covering a large variety of work, one of the principal advantages is the availability of advice from experts in many lines of work. Cooperation

and freedom of exchange of ideas among the workers in diverse fields are highly valuable assets and these would be immediately and seriously endangered if each individual employee thought that his welfare depended upon individual inventions or discoveries. The experience of industrial laboratories has been that effective teamwork is made difficult or impossible when emphasis is placed upon credit to the individual. Furthermore, inventions or discoveries seldom spring entirely from the mind of one individual. Interchange of ideas and discussion of problems stimulate the conception of productive ideas, and in many cases it is difficult to say precisely which individual in a group conceived a new idea.

If rewards are to be given at all they should be granted for discoveries of broad principles and also for the engineering studies necessary to reduce an invention to practice, as well as for the conception of the original idea which constitutes the basis of a patent. Consequently, it appears better to recognize the value of the inventor as one element in an organization rather than to emphasize his particular service on some one or more specific inventions.

While there is thus general agreement that separate awards systems for the inventor would be unwise, there is considerable opinion that the present systems do not adequately reward the inventor or other employee making the truly great invention or contribution, whether in line of duty or not. However, great care must be used if inventions resulting from line-of-duty work are to be given cash awards. To give such awards for inventions and not for nonpatentable contributions of equal importance would be unwise discrimination, as already noted. To give them for all important contributions would, it is felt, create a very bad situation. However, if cash awards for line-of-duty contributions are limited strictly to the truly great inventions, discovery, or other achievement, and are granted by some over-all board or committee with broad authority as to the amount of the awards, it is felt that inventors, as well as other employees, would be adequately covered.

The fact that some industrial firms and the British Government have specific systems for rewarding inventors which operate independently of general incentive and suggestion systems applicable to all employees, has been carefully considered. The conditions and circumstances prevailing in these cases are basically different from those existing with respect to the management of employees of the United States Government; consequently, it is the belief of the committee that a separate awards system for Federal employee-inventors would not attain the objectives sought as effectively as a broad integrated program including all classes of employees.

B. TYPES OF AWARDS

The nature and type of awards to inventors might include:

1. Retention of commercial rights by the inventor,
2. Cash awards and bonuses,
3. Pay increases,
4. Promotions,
5. Public recognition and honors.

Retention of commercial rights by the inventor is sometimes regarded as a form of reward to the patentee. The uniform patent policy for the Government

provides that, under certain circumstances, the commercial rights are left to the inventor subject to a license to the Government for governmental purposes.

The cash award with subsequent bonuses dependent upon the proven continued usefulness and value of the invention is a most workable form of award for outstanding contributions that are distinctly beyond the normal anticipated productivity of the employee-inventor.

Commercial organizations in their exploitation of patents have recognized that the new invention to survive must usually pass progressively through the patent, the development, the market introductory (termed by Dr. Kettering "shirt losing") and the profit making stages. A minimum of 3 years for the complete launching of a new invention to the profitable stage is typical of American practice. This indicates that many inventions will not demonstrate their true worth for some years after the patent is allowed. This would indicate that the awarding agency should be authorized to make an adequate cash award for early recognition of a patent with authority to make further subsequent cash awards over several years, if development or accrued benefit should justify such action.

Assured pay increases might serve as an incentive to invention but in presenting this type of award the Government assumes the permanent value of the inventor's general services has been increased by an increment equal to the award increase and this for all future Government employment of the individual.

There are many inventors, who, although they work diligently at the task, present only one meritorious invention in their lifetimes. Further, if the invention proves to be one of increasing value with its years of use, it would be most difficult to determine equitably subsequent awards in terms of additional pay increases. As an award method, a pay increase for outstanding inventions is not as equitable and workable as the cash and subsequent bonus reward.

In many cases, a very important effect of an outstanding investigation or research enterprise of the employee-inventor will be that his more active general performance as an employee instead of his special contribution as an inventor should be recognized. The demonstration of unusual inventive ability may be a manifestation of the employee's ability to tackle successfully problems of increasing difficulty and complexity, thus justifiably meriting promotion to a higher grade of position.

In public recognition and honors to outstanding inventors the Government of the United States has an opportunity of making a great contribution to her scientific and technological advancement. To many individuals, suitable honors awards are much more meaningful than monetary rewards. Consequently, the value and importance of this type of award must be recognized and programs for honors awards should be strengthened.

Specifically, a graduated system of honors and recognition to discoverers and inventors would inspire real competitive research and development. Within the Government departments and divisions, it might be organized most intensively and operated with a high degree of effectiveness. Those in Government who have made the most outstanding contributions to research and dis-

covery should be advanced to a high level of recognition and this top level honor should be in competition with the Nation's best.

C. DEFICIENCIES AND LIMITATIONS IN PRESENT LAWS COVERING AWARDS

The provisions of existing laws for granting cash awards have already been discussed under section II. The many basic inequities, overlapping of eligibility requirements, and other problems inherent in these laws are worthy of detailed exploration.

Under Public Law 600 (79th Cong.), the Administrative Expenses Act of 1946, all civilian officers and employees are eligible for awards. However, more than one-half the total civilian officers and employees in the Federal Government are ineligible for awards under either Title VII or Title X of the Classification Act of 1949. An employee-inventor may therefore be eligible under one law and ineligible under another law, or he may be eligible under several laws. The principal exclusions under the Classification Act of 1949 relate to wage board and certain postal employees.

Under Public Law 600 (79th Cong.), cash awards for suggestions are limited to not more than 5 percent of the estimated first year's net savings. In the case of suggestions resulting in savings of more than \$1,000, the award is based on an even smaller percentage of the savings. Under Title X of the Classification Act of 1949, cash awards, whether based upon a suggestion or other personal accomplishment, are limited to not in excess of 25 percent of the estimated first year's net savings or an amount equal to three times the step increase of the employee's grade. Thus, for a suggestion which results in a net savings of \$1,000 for the first year, an employee can receive up to \$50 under the provisions of one law and up to \$250 under another law.

Furthermore, the amount of an award under Title X of the Classification Act of 1949 is geared to the employee's grade as much as to the intrinsic worth of the contribution. The higher the grade of the employee, the greater is his return. This occurs because the maximum cash award payable for an employee in grade GS-3 is \$240; for an employee in grade GS-5, \$375; for an employee in grade GS-11, \$600; for an employee in grade GS-15, \$750, even though each would make the same contribution to the efficiency or economy of the organization.

There are similar inconsistencies in applying the respective laws to individual cases. For example, an employee in grade GS-2 who receives a salary increase for superior accomplishment under Title VII of the Classification Act of 1949 and remains in that grade for 6 years, would in that period receive the amount of \$480. If given a two-step increase or a three-step increase under Title X of the Classification Act of 1949, he would realize \$960 or \$1,440, respectively, in a 6-year period. For an employee in GS-15, a three-step increase would, over a period of 6 years, amount to a total increase in income of \$4,500.

Other factors, such as whether a suggestion is "in line of duty" or "outside the

normal requirements of the duties of (the employee's) position" are brought into play in determining kinds and amounts of awards. In some cases, an award for a contribution "in line of duty" may be in excess of an award for a contribution which is determined to be "outside the normal requirements of the duties of (the employee's) position."

On a Government-wide basis, other disparities exist. Under Public Law 600 (79th Cong.), a total of \$25,000 in awards may be made in one fiscal year by any department or agency, regardless of the size of the department or agency. Also, a maximum of \$1,000 may be paid for a suggestion. These provisions do not apply to the Department of Defense. It seems illogical to presume that only in the Department of Defense can the employee, including the employee-inventor, make the kind of contribution that may result in an award in excess of \$1,000. The restriction that a department, other than the Department of Defense, may not make cash awards aggregating more than \$25,000 in any one fiscal year in one instance forced a large Federal agency to repress its suggestion program because the \$25,000 limitation had been reached before the end of the fiscal year.

In limiting the amount of cash awards or pay increases to a percentage of the first year's net savings, an inadequate reward results to the employee-inventor who may make the infrequent truly outstanding contribution. In the invention field, particularly, maximum savings are generally achieved subsequent to the first year in which the idea was developed.

Final grants of efficiency awards under Title X of the Classification Act of 1949 may be made only by the over-all agency efficiency awards committee subject to the approval of the head of the agency. However, authority to grant within grade pay increases as awards for superior accomplishment under Title VII of the Classification Act of 1949 may be delegated by the head of the agency to the heads of constituent bureaus or other officials. Authority to grant awards for suggestions under Public Law 600 may also be delegated.

No provision is made in any existing law for awarding the employee-inventor for contributions of value to other agencies or departments of the Federal Government. In the final analysis, each agency is an integral part of the total United States Government. An employee in any department or agency is subject to broad general laws and regulations applying throughout the Federal Government. The undesirability of thinking of an employee only with respect to his own particular agency or department was indicated by the Hoover Commission in its report on Personnel Management when it stated "the executive branch recognizes, but is not dealing adequately with, the problem of transferring competent personnel . . . from one agency to another." Rewarding employees for contributions of benefit to the whole Government service would be a step forward in the concept of an integrated Federal personnel program.

The Bureau of the Budget is investigating the problems of agencies in administering the diverse incentives and awards programs, currently authorized by the various laws, with a view toward obtaining a single statute to provide for a uniform comprehensive incentives and awards program for all Federal employees.

D. DEFICIENCIES OF SYSTEM WHICH PERMITS AWARDS UNDER SPECIAL DEPARTMENTAL STATUTORY AUTHORITY

It will be noted, from the foregoing discussion under section II that, prior to August 2, 1946, only five Government agencies were specifically authorized to reward civilian employees with cash payments for suggestions or inventions. This evidently discriminatory treatment of the employees of those agencies not having special statutory authority to make awards for suggestions or inventions was obviated, at least in part, by the enactment of Public Law 600 (79th Cong.) on August 2, 1946.

Two agencies—the Department of the Interior and the Tennessee Valley Authority—seem to have retained to some extent their special statutory authorities with respect to rewarding inventors. They have indicated that, in practice, they have made no more than a slight application of these special authorities since the enactment of Public Law 600.

Moreover, prior to 1943, the special statutory authority of the Department of the Army was limited to awards in the field of ordnance. The special statutory authority of the Patents and Design Board was, prior to 1946, and still is, confined to the field of aircraft design.

It will be observed, in the discussion under section II, that the several special statutory authorities pertain to special groups and special subject matters; there are variations both with respect to the amounts which may be awarded, either monthly or annually; and there are variations in the sources of the funds, i. e., appropriations and income from licensing.

None of the five agencies reported any difficulty with respect to administration under such statutory authority. On the contrary, the Department of the Interior and the Tennessee Valley Authority have indicated that they wish to preserve their special statutory authorities and discretion in administering their awards programs.

IV. FINDINGS AND CONCLUSIONS

The desirability and the advantages to the Government of rewarding inventors are such that we cannot afford to fail to take positive measures to reward present inventive achievement if we are to hope to reap the rich potential harvest.

There have been occasional doctrinaire attempts to categorize and to postulate uniform characteristics for inventors. However, the extent to which they are money-minded, like the extent to which they appreciate or will be stimulated and satisfied by professional recognition, varies considerably. To appeal to as many potential inventors and elicit as many inventions as possible, it is only the better part of wisdom to suggest that several types of awards be made available.

It has been noted elsewhere in this report, particularly in section IV, that present general awards systems, and specific provisions of law for rewarding inventors in particular departments, are inconsistent and overlapping. They permit possible inequities and make proper administration of the systems difficult.

To avoid charges and imputations of partiality and favoritism and to provide a well-rounded program for stimulating creative contributions, a separate system for rewarding inventors should be rejected. Instead, adequate provision for rewarding inventors should be made in a broad integrated program relating to all types of contributions.

Pending adoption of the well-rounded program which the committee recommends, more advantages might be derived from the present systems. Although existing laws are obviously deficient in many respects in their impact on the employee-inventor, in order to obtain the maximum advantage to the Government and the public within the framework of existing laws, the specific benefits and rewards possible to the employee-inventor might be ascertained and disseminated. The ultimate objective, however, would be to attain more adequate and satisfying recognition and reward for inventors through new basic legislation for all Federal employees. Appropriate provisions for inventors should be included in any such legislation.

In considering the broad problem, the following principles should be guideposts:

1. Any program developed should be forward-looking, i. e., it should recognize that the goal is the encouragement of inventions and contributions.
2. In encouraging and promoting greater inventiveness, the rewards system should afford some flexibility and a liberal scale of awards for the purpose of suitably rewarding outstanding inventions.
3. To minimize the jeopardy or prejudice to research programs which might result if all employees become invention conscious, we recommend that the work of employees be considered carefully for the purpose of assurance that all

extraordinary contributions—whether of an inventive nature or not—are suitably recognized.

4. Not all inventors should be automatically rewarded. Awards should be made only for useful inventions beyond the call of normal duty. The specific inventive contribution made by an employee should be one which his co-workers recognize as meriting an award; otherwise, the result might be to damage morale and consequently to lower the work output of other employees.

5. Positive measures should be taken to assure adequate dissemination of information on new discoveries. Full utilization of new ideas tends to inspire the inventor and lead him to greater contributions.

A. RECOMMENDATIONS FOR NEW LEGISLATION FOR A COMPREHENSIVE INCENTIVES AND AWARDS PROGRAM FOR GOVERNMENT EMPLOYEES INCLUDING INVENTORS

Based on the findings and conclusions of the committee, the Chairman of the Government Patents Board should endorse new legislation having as its objective the integration, simplification, and liberalization of all awards programs. Such legislation should permit rewarding of employees making all types of meritorious contributions, including discoveries of basic scientific principles, as well as inventors.

1. Application of Proposed Law to Inventors

The committee recommends that the requirements and application of a proposed new law provide that the following principles be observed in the treatment of the employee-inventor:

a. *All civilian employees of the Government should be eligible.* Although this recommendation affirmatively includes only civilian employees, the committee sees no reason why the recommendation should not cover military personnel as well.

b. *Employees most likely to produce inventions by reason of the nature of their employment or assigned duties should not necessarily be excluded by reason of such employment.* However, for such employees to qualify for an award, their inventions definitely would have to be outstandingly beyond the normal requirements of their work.

c. *Two basic types of awards should be recognized for employee-inventors.* The first would be *cash awards*, with provision for a sufficiently large monetary award for the infrequent invention of truly outstanding value, and the authority for additional cash awards over an extended period of several years if subsequent developments or accrued benefits should warrant it. The second would be *honor awards*. Honor awards are particularly significant in some bureaus and in some fields of scientific specialization. The honor awards program should be strengthened and promoted. An award of either type should not necessarily preclude the granting of both types of awards, under appropriate circumstances.

d. *The award should be dependent on the value of the contribution.* Authority should be conferred for determining the extent of the cash award for an invention not only on the basis of savings to the immediate organization within the first year or other period but in a proper case on its value to the Government as a whole, especially if the value of the contribution cannot be determined in terms of dollars. Consideration should also be given to its value to the public in determining the award.

In connection with these recommendations the committee believes that: (1) the fact of invention is pertinent to the performance and rating of the employee-inventor and should continue to be considered in accordance with existing practices in connection with promotions or other recognition, and (2) the granting of an award should not be dependent upon whether the employee-inventor retains the commercial rights under the existing uniform patent policy of the Government. The retention by the inventor of commercial rights in an invention, while a factor to be considered, should not preclude the granting of a cash award.

2. Limitations on Total Funds Agencies May Expend for Awards

The committee recommends against establishment of an over-all ceiling figure for each agency limiting the total funds to be spent each year on its awards program. These ceiling figures are essentially arbitrary and productive of inequities. The developments of a particular year may be unpredictable and deviate widely from the pattern, resulting in an injustice, inadequacy of awards, and impaired morale. These limitations, in effect, gainsay the mutual benefits to be derived from the awards program.

3. Awards Involving More Than One Agency

To cover the case when the invention is of special value to a department other than the one in which the inventor is employed or when the inventor has transferred to another agency before his former agency has rewarded him for his invention, *transfer of funds or other arrangements for awards purposes should be authorized.*

4. Rewards for Group Effort

For those situations in which credit for the invention is not clearly due an individual, there should be authorization to reward the research scientists and collateral personnel directly concerned for inventions stemming from group effort. This is an increasingly common situation.

5. Rescission of Previous Awards Legislation

In view of the comprehensiveness of the suggested program, the desirability of uniformity, and the danger of conflicting provisions if the program is superimposed on the present patchwork quilt, *the committee recommends the rescission of all previous general awards legislation and, to the extent practicable, the rescission of all previous special provisions of law governing rewards for inventors in individual agencies.*

B. RECOMMENDATIONS WHICH MAY BE EFFECTUATED IMMEDIATELY WITHOUT NEW LEGISLATION

Despite the many inconsistencies in the existing laws governing awards to employees, including the employee-inventor, there are several steps that can be taken by Federal agencies and departments to administer more effectively current awards programs, pending remedial legislation. *It is urged that the Chairman of the Government Patents Board bring the following recommendations to the attention of the heads of Federal agencies, and that necessary steps be taken to see that they are carried out:*

1. Application of Existing Programs to Inventors

Existing awards programs authorized by law are, in many cases, applicable to employees in the Government service who make meritorious inventive contributions, and should be so construed and applied.

2. Agency Review of Existing Programs

All Federal agencies should review their existing incentives and awards programs to assure that fullest possible advantage is taken of current laws as they apply to the employee-inventor.

3. Publicity

For the purpose of stimulating inventive productivity of employees, agencies should publicize, through appropriate media, the fact that employees making inventive contributions of merit may be rewarded under current awards programs.